

Title (en)

OPTICAL SWITCH WITH IMPROVED SWITCHING EFFICIENCY

Title (de)

OPTISCHER SCHALTER MIT VERBESSERTER SCHALTEFFIZIENZ

Title (fr)

COMMULATEUR OPTIQUE À EFFICACITÉ DE COMMUTATION AUGMENTÉE

Publication

**EP 3248056 A4 20180117 (EN)**

Application

**EP 15883043 A 20151212**

Priority

- US 201514630093 A 20150224
- CN 2015097218 W 20151212

Abstract (en)

[origin: US2016246157A1] An optical device comprises a first optical coupler configured to receive a light signal and provide a first output and a second output, a first optical waveguide in optical communication with the first output and configured to provide a first optical path for a first portion of the light signal, and a second optical waveguide in optical communication with the second output and configured to provide a second optical path for a second portion of the light signal, wherein the first optical waveguide is configured to provide a phase differential between the first optical path and the second optical path, wherein the second optical waveguide is positioned according to a lateral thermal diffusion length associated with the first optical waveguide, and wherein the lateral thermal diffusion length is a spreading distance of a thermal effect in a direction about perpendicular to the first optical path.

IPC 8 full level

**G02F 1/01** (2006.01); **G02F 1/025** (2006.01)

CPC (source: EP US)

**G02F 1/2257** (2013.01 - EP US); **G02F 1/0152** (2021.01 - EP US); **G02F 1/212** (2021.01 - EP US); **G02F 2203/60** (2013.01 - EP US)

Citation (search report)

- [XY] US 2013170782 A1 20130704 - EVANS PETER W [US], et al
- [Y] GRAHAM T. REED ET AL: "Recent breakthroughs in carrier depletion based silicon optical modulators", NANOPHOTONICS, vol. 3, no. 4-5, 1 January 2014 (2014-01-01), XP055433174, ISSN: 2192-8606, DOI: 10.1515/nanoph-2013-0016
- [A] LIANGJUN LU ET AL: "CMOS-compatible temperature-independent tunable silicon optical lattice filters", OPTICS EXPRESS, vol. 21, no. 8, 9 April 2013 (2013-04-09), pages 9447, XP055432831, DOI: 10.1364/OE.21.009447
- [A] SUGITA A ET AL: "BRIDGE-SUSPENDED SILICA-WAVEGUIDE THERMO-OPTIC PHASE SHIFTER AND ITS APPLICATION TO MACH-ZEHNDER TYPE OPTICAL SWITCH", TRANSACTIONS OF THE INSTITUTE OF ELECTRONICS, INFORMATION AND COMMUNICATION ENGINEERS OF JAPAN, INST. OF ELECTRONICS & COMMUNIC. ENGINEERS OF JAPAN. TOKYO, JP, vol. E73, no. 1, 1 January 1990 (1990-01-01), pages 105 - 108, XP000103975
- See references of WO 2016134607A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**US 2016246157 A1 20160825; US 9638981 B2 20170502**; CN 107003548 A 20170801; CN 107003548 B 20200609; EP 3248056 A1 20171129; EP 3248056 A4 20180117; EP 3248056 B1 20200325; JP 2018506745 A 20180308; WO 2016134607 A1 20160901

DOCDB simple family (application)

**US 201514630093 A 20150224**; CN 2015097218 W 20151212; CN 201580064941 A 20151212; EP 15883043 A 20151212; JP 2017544766 A 20151212